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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|--------------------------|---------------------|------------------|
| 09/919,772 | 07/31/2001 | Jeffrey Alexander Wilmer | K0476/7005 PCL | 4009 |

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EXAMINER

SOOHOO, TONY GLEN

ART UNIT PAPER NUMBER

1723

DATE MAILED: 12/26/2002

9

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

| | | |
|--|-------------------------------|-------------------------------|
| | Application No. 09/919,772 | Applicant(s) WILMER ET AL. |
| | Examiner Tony G Soohoo | Art Unit 1723 |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) Responsive to communication(s) filed on 09 December 2002.

2a) This action is FINAL. 2b) This action is non-final.

3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) Claim(s) 1,3 and 27 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) Claim(s) _____ is/are allowed.

6) Claim(s) 1,3,27 is/are rejected.

7) Claim(s) _____ is/are objected to.

8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) The specification is objected to by the Examiner.

10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11) The proposed drawing correction filed on _____ is: a) approved b) disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.

12) The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) All b) Some * c) None of:
1. Certified copies of the priority documents have been received.
2. Certified copies of the priority documents have been received in Application No. _____.
3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.

14) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) The translation of the foreign language provisional application has been received.

15) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) Notice of References Cited (PTO-892)
2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) Information Disclosure Statement(s) (PTO-1449) Paper No(s) 45

4) Interview Summary (PTO-413) Paper No(s) _____.
5) Notice of Informal Patent Application (PTO-152)
6) Other:

DETAILED ACTION

Election/Restrictions

1. Applicant's election of Group VI (figure 10), subgroup 1 (density sensor) in Paper No. 8 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).

Acknowledgement is made to applicant's cancellation of claims 2, 4-26 and 28-36. Claims 1, 3, and 27 remain in the application and are deemed readable upon the elected species.

Drawings

2. This application has been filed with informal drawings which are acceptable for examination purposes only. Formal drawings will be required when the application is allowed.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claim 3 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The only remaining dependent claim 3 is dependent upon a cancelled claim 2, thereby rendering the claim unclear in the meets and bounds of the invention. However in light that the only independent apparatus claim is claim 1, for examination purposes,

the claim 3 will be read as being depending upon claim 1. Nonetheless the claim must be amended to correct the clerical oversight, introduced in the response of Dec 09, 2002, paper no 8.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 1 and 27 rejected under 35 U.S.C. 102(b) as being clearly anticipated by Waters 3266780.

Waters discloses the following:

A blending system (fig 1), comprising: a first material supply line (14, input A); a second material supply line (20, input B); a static mixer (18, figure 2) fluidly connected downstream of the first and the second material supply lines (14, 20); and a process control system (31, 42, 44, 43, 46, 48, 26) comprising a first flow control device (26) positioned on the first material supply line (14), a first sensor (30) positioned downstream of the static mixer (18), and a controller (39) comprising logic code to provide a control signal to the first flow control device (26) based upon a sensor signal (38) provided by the first sensor (30).

A method of supplying blended process materials, comprising: supplying a first process material (input A) through a first of material supply line (14); supplying a second process material (input B) through a second of material supply line (20); blending the first and the second process materials in a static mixer (18, figure 2) fluidly connected downstream of the first and the second material supply lines (14, 20); and regulating the supply of the first process materials with a first valve (26) positioned on the first material supply line (14) based upon a sensor signal (38) provided by a sensor (30) positioned downstream of the static mixer (18).

See also discussion in the patent, column 3, lines 48 through column 4, line 20.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claim 3 is rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Waters 3266780.

With regards to claim 3 and the recitation of a "density sensor", it is noted that a measurement of density may be performed by various passive testing and measurement devices utilizing different various energy sources, such sound, light, any portion of the spectrum of wave energy and the corresponding consideration of the refractive index measurements of the energy, or electrical conductivity as means to passively test and measure properties of a material in which a physical property may be calculated (such as determination of density, mass flow, concentration, pH, etc). Thus, the term density sensor may structurally define a wide range of physical sensors which may perform testing and measurements in which the density may be calculated.

The issue within claim 3 is the requirement of a "density sensor". The reference to Walters teaches a "sensing head" which measures "refractive index" of a flow across the sensing head 30 whereby "the index is indicative of the concentration of the ingredients in the mixture entering inlet 29", column 3, lines 48-50. The sensor sends a

feedback signal 38 back to a control circuit 39 which ultimately controls a transducer to operate a valve 26 to regulate flow a material A in conduit line 14.

It can be argued that the determination of the density of the mixture may be also performed by the "sensing head" in the determination of the concentration by the sensor 30, since the starting liquid materials are of a relatively constant density, a measurement calculation of the relative concentration of the ingredients by the sensor may also be an indicative measurement the density of the mixture by the sensor. Upon such an interpretation that that a "refractive index" sensor may be a "density sensor", the reference to Waters anticipates claim 3.

Assuming in argument that a "refractive index" sensor is not a "density sensor" per se, nonetheless such a calculation may be made by a person having ordinary skill in the art and easily programmed in the control circuit to determine the density whereby the variables of the density of the input materials A and B are constant and that a determination of the concentration of the mixture A and B as determined by the sensing head 30 device of Waters may be used to calculate the relative density for control of the valve 25 such that a more precise density of material of A to B is provided for in the final end product.

9. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Waters 3266780 in view of Liu et al 4835456 and Prough 4146422 and Witt 2964993.

Under one interpretation of the scope claim language, Waters discloses all of the recited subject matter as defined within the scope of the claims with the exception of the sensor being a "density sensor".

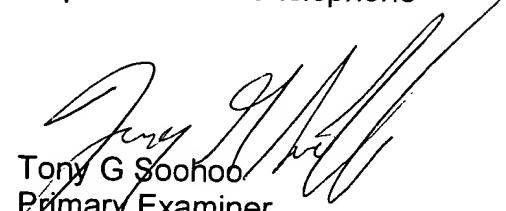
Each of the references to Liu et al 4835456 and Prough 4146422 and Witt 2964993 teach a sensor which may detect flow material characteristics in a flow mixture whereby the sensor senses the density. While the sensor measures density, it may further use the measurement of density in the further processing of other flow characteristics.

In view of the teaching by Liu et al 4835456 and Prough 4146422 and Witt 2964993 that a sensor may detect density for the analysis of the flow characteristic, it is deemed that it would have been obvious to one of ordinary skill in the art to modify the sensor, or substitute the sensor with the type taught by Liu et al 4835456 and Prough 4146422 and Witt 2964993 such that the device and method of Waters may more precisely control the final mixture in proportion to density, mass flow, or other characteristics desirable for precise mixture proportioning.

Conclusion

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The following references disclose plural feed with control and sensors in the feed lines and the mixture output lines: Fahy et al 4427298, Peltzer 6224778, Koepke et al 3779518, Hiroi 4621927, Jones et al 5423607.
11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tony G Soohoo whose telephone number is (703) 308-2882. The examiner can normally be reached on 7:00 AM - 5:00 PM, Tues. - Fri.. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9310 for regular communications and (703) 872-9311 for After Final

communications. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.



Tony G. Soohoo
Primary Examiner
Art Unit 1723

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